THE PREVENTION OF SUMMER DIARRHŒA AMONG INFANTS,

VIEWED IN THE LIGHT OF THE LESIONS.

BY

I. EMMETT HOLT, M.D.,

OF NEW YORK

FROM

THE MEDICAL NEWS,

February 23, 1889.

[Reprinted from THE MEDICAL NEWS, February 23, 1889.]

THE PREVENTION OF SUMMER DIARRHŒA AMONG INFANTS, VIEWED IN THE LIGHT OF THE LESIONS.[1]

BY L. EMMETT HOLT, M.D.,
OF NEW YORK.

THE purpose of this paper is to call attention to the fact that many of the so-called dyspeptic intestinal catarrhs of infancy, commonly looked upon as merely functional in character, produce lesions of considerable moment. These lesions are of importance, not so much in their immediate effects as in their relation to the severer forms of disease, particularly entero-colitis.

My attention was first drawn to these cases by two autopsies made last summer upon infants ten months old. One child died of acute pneumonia without intestinal complications. Throughout the large intestine the solitary follicles were very much increased, both in size and in number. In some places they were so numerous as nearly to cover the mucous membrane. This enlargement was at the expense of

[1] Read before the New York State Medical Society, February 5, 1889.

the rest of the mucous membrane. The follicles were eroded at their summits in many places, and looked as though they were beginning to ulcerate. Some of these erosions might have been produced accidentally in mounting the specimen, but many were present when it was removed from the body.

During the first five months of life, the mother stated that the infant had never had normal movements from the bowels; the passages were green or greenish-yellow, nearly always containing mucus, but were never frequent, at most three or four daily. The child was nursed entirely, and as the general health did not seem to be affected, and it gained steadily in weight, the mother did not think this intestinal catarrh of sufficient importance to call the resident physician's attention to it, although he saw the infant daily. The passages gradually became normal without treatment, and during the last five months before death had continued so.

The second case was that of an infant who was injured by falling from a window, and died within an hour. In this colon almost the same condition as seen in the first case was found to exist. The patient had never suffered from acute diarrhœa, but for nearly three weeks before death its stools had been very much of the nature previously described. Nor in this case had the mother regarded the fact as of any importance.

Microscopical examination in these cases revealed very slight catarrhal changes, but the important feature was the great enlargement of the solitary follicles.

Further experience in the examination of the intestines in patients dying from other diseases, usually pneumonia, confirmed the impression made by the first two cases, viz., that a dyspeptic intestinal catarrh (I use this term for want of a better) produces, when it is allowed to run on, marked alterations in the walls of the intestine.

If we examine a child's intestine some months after a sharp attack of entero-colitis, we find a very similar anatomical condition.

In cases of acute entero-colitis, dying after ten or twelve days' illness, the most constant change found is swelling of all these solitary follicles with, in many places, the formation of small circular ulcers from the breaking down of these follicles.[1] We conclude then that this condition of the solitary follicles such as we have described as occurring in dyspeptic catarrh, has a very intimate relation to follicular colitis. We may, perhaps, be justified in regarding it as identical with the first stage of the ulcerative process. The swelling in both cases is most likely due to the same cause, the absorption of ptomaines produced by the intestinal decomposition.

The intestines of infants are normally peculiarly rich in lymphoid masses, which, in disease, proliferate with great rapidity. These lymphoid nodules play a very important part in the pathology of the intestines in infancy. The enlargements take place here from slight irritation when continued, just as

[1] Photographs of specimens illustrating these lesions were shown.

in the lymphatic glands of the neck; all the more readily if the patient is delicate or cachectic.

Turning now from the pathological to the clinical side of the question, what do we find?

Meinert, of Dresden, in a paper published last year, and extensively quoted, states that of four hundred and seventy-nine fatal cases of diarrhœal disease occurring in that city "seventy-one per cent. had previously healthy digestive organs." His information was obtained from the physicians who treated the cases and gave the certificates of death. The information of physicians under such circumstances we may safely assume would relate to acute or severe forms of gastro-intestinal disease, since mothers do not, as a rule, attach any importance to the dyspeptic intestinal catarrh we are considering. We cannot, therefore, it seems to me, attach any importance to Meinert's statistics as bearing upon the point under discussion.

In the New York Infant Asylum we have under close observation nearly four hundred children, most of them from the time they are a few weeks old until four years old. Our experience there has been that the great majority of all severe and fatal forms of entero-colitis in summer are preceded often for weeks by a "dyspeptic catarrh." Very often, I am sorry to say, this fact is not discovered until severe symptoms have developed, so little importance do the mothers attach to the disorder, particularly if the infant happens to be teething.

An idea of the frequency of follicular ulceration may be gained from the following statistics: Of

fifty-seven autopsies I have made recently upon children dying from diarrhœal diseases, follicular ulceration existed in nineteen, or thirty-three per cent. of the cases. In almost every case the solitary follicles were very much enlarged. These cases presented clinically about all the types met with, and since they were, with but few exceptions, taken consecutively in an institution where all fatal cases come to an autopsy, they may be assumed to represent pretty fairly the frequency of the different lesions. (I need scarcely say that cases of tubercular ulceration have not been included.)

I will not enter here upon the discussion of the subject of intestinal decomposition and the development of abnormal bacteria, not because I underestimate its importance, but because my present purpose is to emphasize the other aspect of the question. The lesions, while no doubt aggravated and possibly primarily caused by the bacterial growth, when once present favor it to a marked degree.

It has been too much the fashion recently to think only of intestinal decomposition and not at all of the lesions with which it is so intimately related.

I have spoken chiefly, so far, of changes in the solitary follicles. They are never found unaccompanied by catarrhal changes, but the latter are in most instances of a much milder type and not likely to be so persistent. Follicular changes are slow in disappearing. This explains the long continuance of what are apparently very mild cases of intestinal catarrh, and the frequent relapses after more acute attacks.

The practical bearing of the foregoing remarks is evident:

The treatment of follicular ulceration of the intestine is extremely unsatisfactory. I believe that the great majority of these cases are fatal. Certainly, I have never seen at autopsy in a child anything which resembled a cicatrized follicular ulcer.

Successful treatment must be in the nature of prevention.

Prevention must have regard to all the milder intestinal catarrhs.

Regarding neglected diarrhœas during dentition, so much has been said recently that it is scarcely necessary to enter here again a protest. There is to my mind no more reason why an intestinal catarrh should not be treated, and, if possible, cured during dentition than at any other time. The fact that a child with whooping-cough is extremely liable to bronchitis and pneumonia has never been given as a reason why these complications should not be treated promptly and energetically when they arise.

Is an intestinal catarrh ever salutary? This is questionable. A number of loose movements may be of advantage to expel undigested food or other irritating materials from the intestine, but that a persistent intestinal catarrh, even if not severe, is an advantage to any child at any period remains to be proven.

The medical profession should take strong ground against the prevalent popular opinion, that so long as the general health is not affected, an intestinal catarrh is not only of no importance, but may,

during bronchitis or dentition, even be beneficial, and that to cure it might be injurious.

It is in such cases as these that though amenable to proper treatment in the earlier stages, when allowed to run on, as they often are for weeks or even months, the foundation for grave and even fatal forms of diarrhœal disease is often laid.

The prophylactic treatment involves then the early recognition and intelligent treatment of all the forms of dyspeptic catarrh; in other words, it means that we must secure proper digestion, and this depends chiefly upon proper feeding.

Out attention has been repeatedly called of late to the importance of seeing that our milk and other infant foods are pure and free from germs and putrefactive products. This is all important. Another danger which has not been often enough emphasized is overfeeding.

During the past two years I have been trying to get at some exact data regarding the proper amount of food which an infant, who is artificially fed, should receive at the different periods. This has been studied, first, by measuring carefully at autopsies the capacity of the stomach; and, secondly, by weighing healthy infants who were nursed at proper intervals, before and after they were put to the breast.

While I have not yet accumulated sufficient statistics for publication, still enough has been learned so far to show that the figures given in most of our books are altogether too large, and that the

vast majority of hand-fed infants are *very greatly overfed.*

Difficulty and failure may result from this fact where every other condition for success has been attended to.

In conclusion I would emphasize the following points:

1. Children should not be overfed at any time, but especially not in summer.

2. At this season, also, every dyspeptic catarrh should be attended to; many of these are promptly curable by merely clearing out the intestine and then cutting down the quantity of food.

3. Should an intestinal catarrh, even a very mild one, continue for two or three weeks, one may be pretty certain that he has something more than a functional disorder to deal with.

4. Every mild catarrh should be looked upon as the possible precursor of a severe type of intestinal disease, either near or remote.

5. In the treatment of all diarrhœal diseases it should be borne in mind that there is something more to be considered than the bacteria and the products of decomposition, viz., the anatomical changes.

15 East Fifty-fourth Street, New York.